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CAN STRATEGIC BOMBING WORK AGAINST IRAQ?

by

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Abstract of

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This paper addresses the question whether or not a strategic air campaign can defeat Iraq. In order to answer this question brief consideration is given to the American definition, experience and doctrine of strategic bombing. Next, the coalition's political aims and enemy intentions are examined in order to see if the air option is suited to accomplishing these goals. The outline of the air campaign over Iraq is detailed, with a discussion of its pros and cons. The essay concludes that given the political goals and current conditions in the region, the strategic air campaign is the best military option.

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CAN STRATEGIC BOMBING WORK AGAINST IRAQ?

On August 2, 1990 Iraq invaded and subsequently occupied its oil rich neighbor Kuwait. Responding to a threat to our vital interests in the region, the U.S., in concert with our European allies, and a hastily constructed Arab coalition, began to introduce military forces into the Gulf to counter a perceived imminent threat to Saudi Arabia. As the crisis has continued to unfold, the possibility of using military means to achieve our stated political objectives is becoming a likely option.

The operational commander within the theater is tasked with the responsibility to decide what military conditions must be produced to achieve the intended political goals. In addition he must determine both the sequence of actions and the resources needed to bring about these military conditions. His concerns must be focused on the military situation, but he must be mindful also of the political ramifications of his actions. With these factors in mind and with the knowledge of the broad capabilities that the U.S. has deployed to the region, the issue of what military option to select presents itself for consideration.

This essay will examine one of these options, namely a hypothetical, strategic air campaign directed against Iraq. Past experience provides no clear answer on how effective this option might be, and obviously it is not the only one available. But for the purpose of this paper it will be the focus of the discussion.

In an attempt to explore the intricacies of the issue of the efficacy of a strategic bombing campaign against Iraq, the following precis is offered as a guide to this essay. First, in order to develop the proper background for the intended discussion, brief consideration will be given to the American definition, experience and doctrine of strategic bombing. Next, the current political and military situation will be outlined with an examination of the national and coalitional political goals, military options, and enemy capabilities, limitations and intentions. This will set the stage for a description of the anticipated strategic air campaign. The scope of this discussion will be confined to the conceptual detail found in open press sources. The purpose is not to become bogged down in technical minutiae, but rather to provide enough information to outline the pros and cons of the air campaign. Finally, recommendations will be made as to the usefulness of the military option under consideration.

Let us begin with a definition. Simply put strategic bombing is the bombing of an enemy's territory with the intent to destroy or disrupt his capability and will to fight. Implied within this definition is the broader aim of compelling an enemy to do your will. In a fundamental sense it is directed at his society's ability to wage war, including its political, social, economic and military institutions. In certain circumstances strategic bombing

would also target civilian populations. The bombing itself is carried out by Air Force assets but today can be supplemented by strike aircraft and cruise missiles launched by the Navy. Nuclear and conventional options can be exercised, but for the purpose of this paper only the latter will be considered.

Finally, strategic bombing is normally distinguished from air interdiction and close air support, since it is directed at the heartland of a country rather than the battlefield. But operationally speaking these two collateral missions can be seen to have a great effect in complementing the aim of strategic bombing especially in an air only campaign. They both directly reduce an enemy's ability to continue the fight. In addition, the aim of all three missions has a tendency to converge when the theater of operations is geographically limited and confined by a blockade.

The origin of the concept of strategic bombing can be traced to the thought of one of its earliest proponents, Giulio Douhet. Writing in the years immediately following WWI in response to the grisly stalemate found on the Western Front, he attempted to find a solution to the problem that the mass industrialization of war had brought to the battlefield. He turned to the idea of strategic air power and through it hoped to put an end to the nightmare of paralysis found in the trenches of Europe.

In his book, The Command of the Air, he outlined a

theory which called for the return of mobility and maneuver to warfare. The principles of air power which he formulated in this work in 1921 sound surprisingly current. He saw an independent Air Force primarily as an offensive force. It would strike in mass, with great speed, anytime and any place on land or sea. (1) Seeking to destroy the opposing country's air forces first through superior firepower, its primary mission was to "inflict the greatest damage in the shortest possible time" on his territory and ability to make war. (2)

Although Douhet underestimated the ability of a given country to cope with massed aerial bombing, as later examples will show, his ideas have greatly influenced the doctrine of strategic bombing. They can be seen reflected in current Air Force doctrine as well as the discussions surrounding the use of air power in the Gulf.

But before turning to a discussion of the American experience of strategic bombing and how it might relate to the present situation in the Middle East, the following caveats should be kept in mind. The first is the limited nature of our experience with strategic bombing. It encompasses the brief span of fifty years and includes only four conflicts, the European and Pacific theaters in WWII and Korea and Vietnam. Each of these experiences of strategic bombing was unique. In some it worked well, in others it didn't.

It can't be emphasized enough that no set of historical

circumstances repeats themselves exactly. It is important therefore, not to become a prisoner of the past when contemplating a future course of action. Where strategic bombing may have worked in the past there is no certainty it will always work in the future. Conversely, it might succeed where it wasn't so effective before.

History may be a cautious guide to an uncertain future; it can never be an absolute predictor. Only after a careful appraisal of what has gone before, as well as a judicious examination of the current situation can the first tentative plans be made. Within this process the guiding principle of uncertainty in war must be kept ever mindful.

Douhet's theories were taken up and expanded in the U.S. and can be seen at work in the early Army Air Force planning for WWII. The culmination of these deliberations resulted in a plan to conduct daylight, high altitude, precision bombing against industrial targets in Germany. The operational mission which employed this plan was set at Casablanca in January 1943. It called for a joint U.S. and British air offensive which would cause the "progressive destruction and dislocation of the German military, industrial and economic system, and undermining of the morale of the German people to a point where their capacity for armed resistance is fatally weakened so ... as to permit initiation of final combined operations on the Continent."

(3)

How well was this mission accomplished? The U.S.

Strategic Bombing Surveys written after WWII can provide a partial, if somewhat tentative answer. Its final conclusion suggests strategic bombing was a decisive factor in Germany's final defeat. Some of the more important lessons it found were (4): a leading military power, however determined, cannot survive indefinitely under a strategic bombing campaign; the importance of air superiority; passive defense of industry through deception or relocation underground can't be totally effective; while morale of the German people declined under repeated bombing, the power of a totalitarian government shouldn't be underestimated; sustained air attack was necessary to ensure an industry's capacity didn't have time to recover; the importance of intelligence and research and development; and finally the high cost in personnel, aircraft and effort in making the campaign successful.

Evaluated against its original mission statement quoted above, the strategic bombing of Germany has to be adjudged a partial success. Its greatest accomplishment came against Germany's petroleum industry, as the German Army was almost immobilized by lack of gasoline by war's end. However the bombing never totally undermined the moral of the German people to the point it substantially effected industrial capability.

While the complete efficacy of the strategic bombing offensive in the European theater is far from proven the same is not true for the Pacific. The long range bombing of

Japan began in earnest in November 1944. Its twin objectives were to force the surrender of Japan without an invasion or if this failed, to reduce Japanese industrial capacity and will to resist an invasion.

Even before the atomic bombs were dropped on Japan, the strategic bombing campaign was well on the way to meeting these objectives. In addition to industrial and military targets, urban centers were attack beginning in March 1945 with devastating results. The combination of an effective naval blockade of the Japanese home islands along with the aerial destruction wrought by long range strategic bombers was a powerful and decisive factor in ending the war without an invasion.

The American experience of the efficacy of strategic bombing in Korea and Vietnam was weak at best. Fought within the broader context of the policy of containment, these wars saw inherent limitations placed on where and how air power could be used. As long as Korea and Vietnam were supplied from sanctuary areas by China and the Soviet Union, there was little air power could do to permanently effect the outcome.

There was also the constant fear of expanding the conflicts to include another superpower. This fact, probably more than any other, limited the use and effectiveness of strategic bombing. The Air Force had just experienced a total war against Germany and Japan. There they had a much freer hand in determining what to bomb, not

worrying about the political consequences of their actions. They had trouble adapting to the limitations these smaller conflicts brought with them.

Overall, the Air Force viewed its experience of air power in Korea as an anomaly. Their official historian notes "nearly every lesson of the Korean conflict had to be qualified by the fact (it) had been a peculiar war, which was unlike wars in the past and was not necessarily typical of the future." (5) (This comment would be repeated for Vietnam also.) Air interdiction and close air support provided the most effective use of air power; strategic bombing was less effective.

Why was this so in Korea? Beyond the basic facts mentioned above, one has to look to the nature of the conflict as seen by North Korea. Its totalitarian system was able to mobilize its country's resources to fight a war which was difficult for many Americans to handle. Their religious-like fanaticism was expressed by a willingness to die in large numbers, endure hardships and forced manual labor at the same time they survived on very little. (6) These facts must give pause to those who have a blind faith in the superiority of technology to win wars. While air power could be used to counter superior will and numbers with firepower in a conventional limited conflict, it could not in and of itself provide a victory.

In summary, North Korean and Vietnamese societies were primarily rural and agrarian, as opposed to urban and

industrial like Germany or Japan. This tended to mitigate the effects of bombing, especially in its aim to target their industrial capability to wage war. Then again, American moral reluctance to bomb purely civilian targets in order to destroy their will to resist, manifested itself in Korea and to a greater extent in Vietnam. These two facts, along with the imposed limitations of the cold war, explain the failure of strategic bombing in these two conflicts.

Current Air Force strategic bombing doctrine reflects the historical experience recounted above. It sees air power as a "decisive force in warfare" (7), with strategic bombing (8) of the enemy's heartland as its number one mission. In the tradition of Douhet, this mission's objective is to destroy an enemy's war making capability and will to fight by targeting important military, political and economic institutions. Specifically, it aims to destroy "concentrations of uncommitted elements of enemy armed forces, strategic weapon systems, command centers, communication facilities, manufacturing systems, sources of raw material, critical material stockpiles, power systems, transportation systems, and key agricultural areas." (9)

In sum this is the doctrine that will guide the implementation of a strategic bombing campaign in support of our national objectives in the Middle East. It only remains to examine whether these objectives are attainable through its execution.

Turning now to the political and military situation in

the Gulf, we will first examine the U.S.' limited, political objectives and see how they relate to those held by the Saudi lead Arab coalition. Experience has shown the conduct of coalition warfare to be a difficult matter which often fails. When they do succeed, it can be attributed to the compromises each party made within the coalition, subordinating individual wants to a set of common goals.

The U.S.' goals in the current crisis may be summarized as follows. The first objective is to defend Saudi Arabia against possible attack from Iraq. The early and continued introduction of military forces into the region by the U.S. lead coalition has accomplished this objective. And although designed to halt further Iraqi aggression, it also has the side benefit of insuring a continuous supply of oil from the region.

The second goal seeks an unconditional Iraqi withdrawal from Kuwait with a complete restoration of the former Kuwaiti government. Iraq cannot be seen to profit from an attack on a weaker neighbor in the eyes of the international community. The initial strategy to try to accomplish this goal has involved the implementation of a United Nations backed economic blockade of Iraq. While unsuccessful to date, its consequences are slowly accruing, and might be ultimately effective given sufficient time or when combined with military options to be discussed later.

Lastly, the U.S. seeks to restore the military balance of power in the region. (10) Of the three stated aims this

one may be the most difficult to accomplish since it is less precise. It could imply the removal of Saddam Hussein as the leader of Iraq and the reduction of his chemical and nuclear missile threat or the complete destruction of Iraq as a military power in the region. While acknowledging this latter option exists however, General Schwartzkopf has noted, "I am not sure that (it) is in the interest of the longterm balance of power in the region". (11)

While it is important to consider these publicly stated aims in considering what military option to select, it is also crucial not to forget implied goals. Whenever the U.S. becomes involved in a conflict the public wants the war over quickly and with the fewest possible casualties. These traditional and sometimes contradictory goals have a tendency to limit certain military options, but they cannot be completely ignored without political risk.

In examining areas of possible disagreement or concern between the Saudi lead Arab coalition and the U.S.' aims in the region, two factors emerge. The first involves the issue of balance of power. Most Saudis would like to see Saddam Hussein removed from power and be assured that Iraq could never again militarily threaten their country or the other Gulf States. They do not however, desire the complete destruction of Iraq's military power, fearing a tilt in the overall balance of power in the region might encourage Iran or Israel to embark on some future military operation. (12)

Secondly, it seems that the U.S. is still suffering

from the ill effects of the Vietnam conflict, insofar that our staying power is being questioned. (13) Although no one can foresee a possible conflict in the region lasting very long, the possibility does exist and worries the Saudis. Given the volatile nature of the domestic political scene in the U.S. and the uncertainties of war in general, it isn't hard to see why this is so.

Before examining the military options which might be employed to achieve the goals outlined above, it is necessary to discuss Iraq's capabilities, limitations and intentions viewed within the context of the present conflict. This examination will reveal possible vulnerabilities which might be exploited during the military campaign. At the same time it can also reveal potential strengths that might be redirected or avoided entirely.

Slightly larger in area than the state of California, Iraq is a country with an estimated population of 18.9 million, 72% of whom live in urban areas. The production of textiles, petrochemicals, oil refining and cement comprise Iraq's major industries, with the labor force divided among services (39%), agriculture (33%) and industry (28%). (14)

Iraq's military-industrial establishment has demonstrated the ability to manufacture certain types of tanks and artillery. They have also demonstrated the ability to upgrade the foreign supplied models of both these weapons types in addition to combat aircraft and surface to surface missiles. Likewise, Iraq also produces much of the

ammunition and some of the spare parts to support these systems. (15)

Iraq's actual military forces are both experienced and formidable. The knowledge gained during the Iran-Iraq War provides the background for their continued expansion and updating to the point they now have the largest combat force in the region. The land, air and naval components of this force will be considered in decreasing order of importance.

First and foremost is Iraq's ground forces. According to Pentagon estimates given in January, the Iraqi Army has over half a million troops, 3,000 pieces of artillery and 4,000 tanks located within southern Iraq and Kuwait. (16) For the most part these forces are dug into deeply layered defensive positions consisting of wire barriers, minefields, antitank berms and ditches as well as trench and sand fortifications. These elaborate defensive positions are reflective of the success Iraq had against Iran with static defensive warfare, and, along with Republican Guard divisions and the large number of artillery pieces, comprise Iraq's critical capabilities.

Iraq's air force consists of approximately 700 combat aircraft. (17) While some of these planes are modern types, most are not. And even when Iraq enjoyed a vast superiority over Iran, they were unable to take advantage of it due to poor intelligence and communications, and an ineffectual command and control system. (18) Finally, while Iraq's naval forces will probably not play a major part in any

conflict due to its limited size and the confined operational area, it does possess an anti-ship missile threat. (19)

In addition to the limitations just mentioned, much of Iraq's military hardware is out of date. Because it was bought from a variety of foreign countries, there are potential problems with integration and supply, as well as the conflicting styles of military advice that came with it. But perhaps the greatest handicap Iraq is operating under is the coalition's blockade. Once Iraq's military hardware and production capability begins to be lost in combat the blockade will preclude their replacement.

This blockade has also at least partially dictated Iraq's choice of a defensive war fighting strategy. Their intention is to try to outlast the coalition, fighting a protracted, static war. This strategy necessitates a husbanding of resources, while waiting for the coalition to launch a costly ground attack. At the same time Iraq will use its missile and chemical threat in an attempt to disrupt the coalition.

What military course of action can best achieve the coalition's political goals, and at the same time counter Iraq's military capabilities and preferred strategy? Two possibilities include a strategic air campaign which would rely primarily on air power or a combined air land attack which would use ground forces on a par with air power. The remainder of this essay argues the advantages of the former

option, but recognizes the uncertainties of war necessitate the preparation for the later alternative too. Finally, it should be noted the air option does not preclude the use of land and naval assets in important supporting roles. A brief description of the anticipated air campaign will set the stage for a discussion of the pros and cons of the air option.

The coalition's strategic air campaign will aim at destroying Iraq's capability to wage war, thereby recovering Kuwait. High intensity air operations will be conducted around the clock, involving large numbers of strikes against military and industrial targets. The campaign will consist of three distinct phases.

Phase One will be aimed at gaining air supremacy by attacking air defenses; command, control and communications facilities; as well as aircraft and air fields. Phase Two will be directed at strategic targets including oil refineries, power plants and fuel depots; conventional, nuclear, chemical and biological warfare plants and storage facilities; surface to surface missile sites; and military and political headquarters. Finally Phase Three will target Iraq's military forces deployed in southern Iraq and Kuwait. These missions will concentrate on damaging and disrupting supply lines, logistic trains and storage concentrations, especially those which contain water. In addition they will be directed at systematically reducing concentrations of troops, tanks and artillery, reducing their combat effectiveness over time.

These three phases of the air campaign while distinct in purpose, will not necessarily run in sequence. The emphasis and tempo of operations will shift between them as conditions change and military necessity warrant. The duration of the offensive may be days, weeks or months. The key factor is maintaining momentum. The bombing option should continue as long as there are targets available and results are being obtained. Given the magnitude of the task, the patient use of air power will send the message the coalition is in for the long haul and will fight the war on its own terms.

What advantages does the use of a strategic air campaign have over a land war? First and foremost it is the best military option to accomplish the goal of redressing the balance of power in the region by destroying Iraq's large military capability. Since this force is spread throughout the country, the special traits of air power offer the most economical way to accomplish this aim. While no war is ever cheap, the air power characteristics of speed, range and flexibility could account for reduced costs in time, material and most importantly lives.

The importance of minimizing casualties cannot be over emphasized. By its very nature an air campaign risks the lives of very few. It is also more predictable in execution, if not effect, and offers better control and variability in intensity and operational tempo. In contrast, land operations are much less flexible and uniform since they involve more personnel.

In examining the best way to forcibly eject Iraq from Kuwait, strategic air power again offers the preferred method. With it the coalition maintains the offensive and initiative while not playing into Iraq's chosen strategy of fighting a costly ground war. By attacking Iraqi ground forces in theater with air power, the coalition utilizes its advantage in numbers and technical sophistication.

In addition, changes in the effectiveness of air power over the past will also aid this goal. These improvements include the unprecedented scale and intensity of air operations that will be carried out, and the ability to strike day and night with great precision. This last factor has shown dramatic improvement over time. A comparison of typical missions flown in WWII, Vietnam and over Libya in 1986 show the percentage of hits was, 3, 41 and 98 respectively. (20) This accuracy is even more dramatic when one considers the Libyan raid was flown at night through sophisticated air defenses.

Finally, a set of environmental conditions in the theater aids the effective use of air power. Geographically limited and isolated by the blockade, Iraq's urban population and industrial capability are susceptible to its application. The fact the operational area is an open desert where supply and movement is difficult, favors the effectiveness of aerial bombing. Field Marshal Rommel attributed his defeat at El Alamein to the destruction of his supplies by strategic bombing and an overwhelming allied

material superiority. "They (the British) actually undertook no operations (i.e. maneuvers) but relied simply and solely on the effect of their artillery and air force." (21)

Counter arguments against the efficacy of strategic bombing producing results without a substantial ground war center on the following. The first states simply that air power has never won a war before and therefore can't win this one. This reasoning relies on a false premise.

While proponents of strategic bombing postulated it could defeat the Axis in WWII, the fact remains the Allies were involved in a total war. They were not going to rely on any single means for victory, especially an unproven one. Korea and Vietnam were not amenable to resolution by air power alone given the political context of these limited conflicts. The historical record demonstrates air power in isolation has never been used in an attempt to win a war. Therefore its usefulness cannot be entirely dismissed under the present circumstances.

Other counter arguments fall into the trap of letting pre-war doctrine dictate strategy, instead of the desired political ends and wartime conditions. An example of this can be seen in a statement attributed to the Joint Chiefs by General Powell, which cites the necessity of a "combined overwhelming, air, sea and land campaign to ensure a quick victory over Iraq." (22) This quote neglects the fact it will take time to dismantle Iraq's military capability and the best way to do it minimizing casualties is by air.

Other arguments, while acknowledging the ability of air power to inflict great punishment, claim a single dimension attack from the air leaves the initiative in Iraq's hands.

(23) This statement runs counter to current military doctrine and the Principles of War which states the initiative lies with the side on the offensive (be it in the air or on the ground), not the side on the defensive. In the final analysis an army can dig in or disperse all it wants, but if it is isolated by a blockade and has lost control of the skies, it's only a matter of time before it's defeated.

Finally, these arguments aside, there are a number of uncertainties which remain surrounding the conducting of a strategic bombing campaign. There is some difficulty in an air war in demonstrating concrete progress toward a goal. Unlike ground combat, incremental progress is hard to gauge since there is no front line to measure succeeding advances against. Then too, even under the best of conditions battle damage assessment is always problematical. The effect of modern munitions used in combat on various types of targets has not been systematically studied since after WWII. This problem should be addressed after the present conflict is over, with an independent, on site study of the bomb damage in Kuwait and if possible, Iraq.

With these concerns in mind, we return to our original question, "Can strategic bombing work against Iraq?". The answer is a tentative yes. It can't be more definite given

the uncertainties of war. But this much is certain, with the political aims of the coalition and the fact Iraq is isolated by blockade it is the best, first option. Whether it works or not, one of the most important facts to emerge from the conflict may be, that for the first time air power alone was given the chance to win it.

NOTES

1. Giulio Douhet, The Command of the Air (New York: Coward-McCann, 1942), p. 49.
2. Ibid., p. 51.
3. Record of General Eaker's Presentation of the Combined Bomber Offensive to the Joint Chiefs of Staff, quoted in Barry D. Watts, The Foundation of US Air Doctrine (Maxwell Air Force Base: Air University Press, 1984), p. 136.
4. The United States Strategic Bombing Survey Summary Report (European War), (1945; reprint ed., Maxwell Air Force Base, Air University Press, 1987), pp. 37-40.
5. Robert F. Futrell, The United States Air Force in Korea 1950-1953, Rev. ed. (Washington, D.C.: U.S. Government Printing Office, 1983), p. 689.
6. Walter Millis, Arms and Men (New York: New American Library, 1956), p. 298.
7. AFM 1-1, Basic Aerospace Doctrine of the United States Air Force, 16 March 1984, p. 2-11.
8. Strategic Aerospace Offense is the term currently used in AFM 1-1 for strategic bombing. For the sake of continuity and clarity, the historical usage of strategic bombing is retained.
9. Ibid., p. 3-2.
10. A third goal which sought the protection and release of U.S. citizens held in Iraq and Kuwait was achieved in December 1990 with their release.
11. Caryle Murphy, "Saudis Don't Want Iraq's Capability Destroyed," Guardian Weekly, 18 November 1990, p. 18.
12. Ibid.
13. Ibid.
14. Mark S. Hoffman, ed., The World and Book of Facts 1991 (New York: Pharos Books, 1990), p. 720.
15. "Iraq-a Special Report." Jane's Soviet Intelligence Review, October 1990, p. 434.
16. "Washington Roundup." Aviation Week and Space Technology, 7 January 1991, p. 31.

17. Ibid.
18. Nick Cook, "Iraq-Air Power." Jane's Soviet Intelligence Review, October 1990, pp. 435-437.
19. "Iraq-a Special Report.", p. 434.
20. Daniel P. Bolger, Americans at War (Novato, CA: Presidio Press, 1988), p. 433.
21. B. H. Liddell Hart, The Rommel Papers (New York: Harcourt Brace, 1953), pp. 328-329.
22. John D. Morrocco, "Pentagon Defends Ground Buildup in Gulf, Says Air Power Alone Cannot Achieve Goal." Aviation Week and Space Technology, 10 December 1990, p. 81.
23. Ibid.

BIBLIOGRAPHY

- AFM 1-1. Basic Aerospace Doctrine of the United States Air Force. 16 March 1984.
- Auster, Bruce B. and Chesnoff, Richard Z. "Thunder Over Hussein's Head." U.S. News and World Report. 14 January 1991, pp. 22-24.
- Bolger, Daniel P. Americans at War. Novato, CA: Presidio, 1988.
- Clausewitz, Carl von. On War. Translated and edited by Michael Howard and Peter Paret. Princeton, NJ: Princeton University, 1976.
- Clodfelter, Mark. The Limits of Air Power. New York: The Free Press, 1989.
- Cook, Nick. "Iraq-Air Power." Jane's Soviet Intelligence Review. October 1990, pp. 435-437.
- Douhet, Giulio. The Command of the Air. New York: Coward-McCann, 1942.
- FMFM 1-1. Campaigning. 25 January 1990.
- Friedman, Thomas L. "The Air or the Ground: A Debate Over Strategy." The New York Times. 23 January 1991, p. A8.
- Futrell, Robert F. The United States Air Force in Korea 1950-1953. Rev. ed. Washington, D.C.: U.S. Government Printing Office, 1983.
- Hart, B. H. Liddell, ed. The Rommel Papers. New York: Harcourt Brace, 1953.
- Hoffman, Mark S., ed. The World Almanac and Book of Facts 1991. New York: Pharos Books, 1990.
- "Iraq-a Special Report." Jane's Soviet Intelligence Review. October 1990, p. 434.
- Morocco, John D. "Pentagon Defends Ground Buildup in Gulf, Says Air Power Alone Cannot Achieve Goal." Aviation Week and Space Technology. 10 December 1990, pp. 80-81.
- Millis, Walter. Arms and Men. New York: New American Library, 1956.
- Murray, Williamson. Luftwaffe. Baltimore: The Nautical & Aviation Publishing Company of America, 1985.

Schmitt, Eric. "U.S. Battle Plan: Massive Air Strikes."
The New York Times. 10 January 1991, p. A17.

The United States Strategic Bombing Surveys. Maxwell Air
Force Base, AL: Air University, 1987.

"Washington Roundup." Aviation Week and Space Technology.
7 January 1991, p. 31.

Watts, Barry D. The Foundations of U.S. Air Force Doctrine.
Maxwell Air Force Base, AL: Air University, 1984.